

Letter of Transmittal

DEPARTMENT OF PUBLIC WORKS
CITY FACILITIES ARCHITECTURAL SERVICES DIVISION
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TO: Akoni Danielsen , Principal Planner City of San Jose, Department of Planning, Building and Code Enforcement Environmental Review Section 200 East Santa Clara Street, T3 San Jose, CA 95113-1905	SUBJECTS: Story Rd. Mitigation Site No. 1, which contains off-site mitigation plantings for the following bridge construction projects: <ul style="list-style-type: none"> • Wooster Ave. Bridge Replacement Project PP 97-156 • Trimble Bridge Widening Project PP 97-150
DATE: 2-12-09	CITY OF SAN JOSE CIP PROJECT DATABASE FILE NO: 3046

WE ARE SENDING YOU:

<input checked="" type="checkbox"/> Attached <input type="checkbox"/> Shop drawings <input type="checkbox"/> Prints <input type="checkbox"/> Copy of letter	<input type="checkbox"/> Under separate cover via _____ the following items: <input type="checkbox"/> Plans <input type="checkbox"/> Specifications <input type="checkbox"/> Change order	<input type="checkbox"/> Samples <input type="checkbox"/> CPM Schedule <input checked="" type="checkbox"/> Other: Report booklet
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COPIES	DATE	NO.	DESCRIPTION
1	12-15-08	21	Environmental Annual Monitoring Report for Year 5 (2008) for Story Rd. Mitigation Site No. 1

THESE ARE TRANSMITTED as checked below:

<input type="checkbox"/> For approval <input type="checkbox"/> For your use <input type="checkbox"/> As requested <input type="checkbox"/> For review and comment <input type="checkbox"/> FOR BIDS DUE <input checked="" type="checkbox"/> Other: As required	<input type="checkbox"/> Approved as submitted <input type="checkbox"/> Approved as noted <input type="checkbox"/> Returned for corrections <input type="checkbox"/> See notations regarding public safety <input type="checkbox"/> PRINTS RETURNED AFTER LOAN TO US	<input type="checkbox"/> Resubmit copies for approval <input type="checkbox"/> Submit _____ copies for distribution <input type="checkbox"/> Return _____ corrected prints
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TO: Akoni Danielsen, Principal Planner

SUBJECT: Off-site Mitigation for the Wooster Ave. Bridge Replacement Project and the Trimble Rd. Bridge Widening Project

DATE: 2-12-09

Page 2 of 2

REMARKS:

Dear Akoni:

Attached is a copy of the Annual Environmental Monitoring Report for the Story Rd. Mitigation Site No. 1.
Please call me if you have any questions at (408) 793-4148.

SINCERELY,

A handwritten signature in black ink, appearing to read "Gabrielle E. Wilder". The signature is fluid and cursive, with the first name being the most prominent.

Gabrielle E. Wilder

Associate Landscape Architect

Story Road Mitigation Site No. 1

Environmental Mitigation Monitoring Year 5 (2008) Monitoring Report



Biotic Resources Group

Biotic Assessments ♦ Resource Management ♦ Permitting

Biotic Resources Group

Biotic Assessments ♦ Resource Management ♦ Permitting

Story Road Mitigation Site

Environmental Mitigation Monitoring Year 5 (2008) Monitoring Report

Prepared for:

Central Coast Wilds

And

Ms. Gabrielle Wilder

City of San Jose Department of Public Works

City Facilities Architectural Services

200 E. Santa Clara Street

San Jose, CA 95113

Prepared by:

Biotic Resources Group

Kathleen Lyons, Plant Ecologist

December 15, 2008

STORY ROAD MITIGATION SITE No. 1

ENVIRONMENTAL MITIGATION MONITORING REPORT

YEAR 5 (2008)

EXECUTIVE SUMMARY

The Story Road Mitigation Site No. 1 (City of San Jose Database ID No. 3046) encompasses two acres in central San Jose. The project area consists of a seasonal wetland basin and riparian revegetation area immediately east of Coyote Creek. The site is accessed from Remillard Court, a dead-end street north of Story Road, approximately 0.75 mile west of State Highway 101. The project site provides wetland and riparian mitigation for two bridge projects that were implemented by the City of San Jose. These projects are the Trimble Road Bridge Widening Project and the Wooster Avenue Bridge Replacement Project.

The City of San Jose and State and Federal regulatory agencies approved off-site mitigation for these two construction projects through the replacement of 0.36 acre of seasonal wetland habitat and 0.65 acre of upland riparian woodland habitat at the Story Road Mitigation Site (*Addendum Habitat Mitigation and Monitoring Program for Trimble Road Widening and Wooster Avenue Bridge Replacement Project to be Constructed at the Story Road Mitigation Site*, Harris Design, April 10, 2003). In addition, 4,500 square feet of upland riparian woodland plantings were installed to meet the off-site mitigation requirements for the Foxworthy Avenue Bridge Project. However, State regulatory agencies subsequently revoked their initial approval of this site for the Foxworthy Ave Bridge project, and these plantings are potentially available for the City's use as mitigation for another construction project; however, review and approval by the environmental regulatory agencies is required.

Pursuant to project permits, the Story Road Mitigation Site No. 1 must be established and meet performance criteria during Years 1-10. Yearly monitoring reports (Years 1-5, Year 7 and Year 10) are required to be submitted to regulatory agencies by March 31 following each monitoring year, beginning in March 2005.

The mitigation site was planted in fall 2003; 554 riparian plants (container stock) and 189 wetland plants were installed on the site between October and December 2003. Seeding of the wetland basin with wetland plant species also occurred at this time. Following plant installation, the contractors installed mulch around each planting. Belowground and aboveground browse protection cages were installed at all riparian plantings. An additional 194 wetland plants were installed around the wetland basin in June 2004. In January 2006, 20 replacement riparian plantings and 100 additional wetland plants were installed on the site. In November 2006, 36 trees were installed to meet performance standards.

The Biotic Resources Group monitored the mitigation site between January 2008 and October 2008 as per Year 5 protocols. The monitoring program consisted of reconnaissance inspections and a detailed monitoring session.

Central Coast Wilds (CCW) performed maintenance of the mitigation site in Year 5. Maintenance activities included weeding, invasive plant removal (including treatment of Bermuda grass), trash cleanup, and the repair of vandalism. Periodic maintenance inspections by CCW also provided timely documentation of transients and homeless encampments within the mitigation area, which lead to the

City's intervention and site cleanup by the City of San Jose Police Department's Metro Unit. In November and early December the above-ground irrigation lines and sprinkler heads were removed from the planting area and stockpiles for removal by City crews. The irrigation controllers remain on site.

Summary of Year 5 (2008) Monitoring Results

The original monitoring plan required maintenance during the first 3 years of the program. Due to the installation of replacement trees in Year 3 (2006), maintenance was conducted for two additional years (Year 4 -2007 and Year 5 -2008).

The reconnaissance inspections revealed that plant health and survival was good to excellent, as evidenced by observations of the plantings and plant growth. Maintenance of the mitigation site and each individual planting basin was rated very good to excellent, as evidenced in most areas by a low amount of weed cover and maintenance/replenishment of mulch around the tree plantings.

The monitoring documented plant survival as well as environmental features within the riparian and wetland planting areas. Human disturbances to the plantings were minimal, although transients entered the fenced mitigation area and established homeless encampments. The mulch at each tree riparian planting basin was in good condition. Weeds were minimal in the planting basins. Infestations of invasive, non-native plants were limited to patches of Bermuda grass and tree-of-heaven. Control of Bermuda grass was initiated in Year 5; however due to the invasive nature of the species additional control treatments will be necessary to eradicate the species from the site. The mitigation area abuts dense stands of tree-of-heaven, an invasive tree species. Control efforts have been implemented within the mitigation area in 2008; however, seeds from the nearby mature trees are expected to continue to colonize the mitigation area. The spread of these species may have long-term effects on the mitigation site.

The upland areas within the mitigation site support riparian mitigation plantings with an understory of grasses and forbs. No erosion or other disturbances were observed in these areas.

Winter rains of the 2007/08 season began in October 2007. Above-normal rainfall occurred during October and December 2007 and January 2008. This rainfall filled the wetland basin such that the basin was full by the end of January. There was below-normal rainfall for the remainder of the winter season and all surface water had evaporated in the basin in March. The basin has remained dry since late March. The 2007/08 water year is the second consecutive year of below normal rainfall.

According to the mitigation and monitoring plan, the City is responsible for 70% survival for the planted trees and shrubs at the end of Year 5 (2008). As per the data collected during the 2008 monitoring, the Story Road Mitigation Site has met the required plant survival rate. The project currently has a tree survival rate of 74%; the shrub survival rate is over 100%. The shrubs, coyote brush and mule fat had the highest survival rates. Of the tree species, California buckeye has the highest rate at 77%. This is followed by coast live oak (75%), box elder (72%) and blue elderberry (70%). This data incorporates the 2006 replacement plantings. The majority of the container stock trees and shrubs were in good to excellent condition; however, the size of some trees is substandard due to different soil conditions. Riparian woodland sample plots documented tree cover at 14.3% (slightly higher than 2007) and shrub cover at 61.4%. According to the mitigation and monitoring plan, the City is responsible for at least 12% tree cover and 8% shrub cover at the end of Year 5 (2008). The project plant cover values exceed the Year 5 performance standards outlined in the mitigation and monitoring plan.

The wetland basin is required to have a minimum of 50% plant cover (by wetland plant species) in Year 5. As per field observations and wetland quadrat sampling in 2008, wetland plant species have persisted

along the perimeter of the basin and throughout the floor of the basin. Wetland plant cover within the wetland basin was documented at 85.4% in 2008, a slight increase from 2007.

Site maintenance activities (i.e., invasive plant control, maintenance of planting areas, irrigation) are adequate to meet project goals, with the exception of additional maintenance to remove/control the infestation of Bermuda grass and any new occurrences of tree-of-heaven.

Summary of Recommendations for Years 6 (2009) through 10 (2012)

The mitigation site is required to be maintained and monitored by the Department of Transportation through Year 10 (2012). Follow-up monitoring and annual reports are required for Year 7 (2010) and Year 10 (2012).

Due to the success of the installed riparian trees and shrubs and the continuing development of herbaceous wetland plant species within the wetland basin no remedial planting is required.

The riparian mitigation area requires continued maintenance to ensure that site conditions remain conducive to the continued growth of installed plants and success criteria are reached in Years 7 and 10. Maintenance needs include the following actions:

- Continued removal/control occurrences of invasive non-native plant species that occur and/or invade the site (i.e., Bermuda grass and tree-of-heaven). Check site and treat infestations of these species a minimum of twice a year.
- Periodic inspections to detect site vandalism and habitat disruption and degradation caused by transients and homeless encampments. As evidenced in 2008 the site is located adjacent to several large homeless encampments within/along the Coyote Creek corridor and a homeless encampment established within the mitigation area in 2008. Although the perimeter fence and gates will be retained until 2012 (or longer if so desired by the City), the site may be prone to the establishment of homeless encampments. If such encampments are found, the SJPd Metro Unit should conduct an enforcement sweep. Park maintenance crews should implement a creek clean-up for the area, as needed.
- Prior to Year 10 the City will cut 18"x18" openings at the bottom of the perimeter fence, 50 feet on-center, to allow small animal movement between the mitigation area and the creek. The perimeter fencing and gates can be retained.
- Implement the tree-of-heaven removal plan prior to Year 10. This tree removal plan is presented in Appendix A. The removal of these invasive trees will provide long-term benefits to the mitigation area.
- Continue removal/eradication of Bermuda grass and thistles from the mitigation area, reaching less than 5% cover by the end of Year 10.

Monitoring for Years 7 (2010) and Year 10 (2012) should follow the guidelines in the mitigation and monitoring plan. Monitoring shall document plant species, tree height and plant cover within the seven sample plots, document plant species and cover within the wetland basin and periodic reconnaissance inspections of the mitigation area. Year 7 and 10 reports are required to be submitted to the Regional Water Quality Control Board and the City of San Jose Planning Department.

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STORY ROAD MITIGATION SITE No.1

ENVIRONMENTAL MITIGATION MONITORING REPORT

YEAR 5 (2008)

1.1 INTRODUCTION

The Story Road Mitigation Site No.1 encompasses two acres in central San Jose. The project area consists of a seasonal wetland basin and riparian revegetation area immediately east of Coyote Creek. The site is accessed from Remillard Court, approximately 0.75 mile west of State Highway 101. The project's location is depicted on Figure 1. The project site provides wetland and riparian mitigation for two bridge projects that were implemented by the City of San Jose. These projects are:

- Trimble Road Bridge Widening Project
- Wooster Avenue Bridge Replacement Project.

The two roadway projects were designed to minimize impacts to riparian and wetland resources, however, construction occurred in the riparian corridor and affected riparian and wetland resources. These actions were outlined in the project's environmental documents and accompanying regulatory permits. The two roadway projects were determined to have direct and indirect impacts on wetland and riparian resources. Due to impacts to these sensitive resources, the City developed specific environmental mitigation measures for the project. These measures include riparian and wetland habitat replacement and long-term maintenance and enhancement of a designated mitigation area, as depicted on Figure 2. Specific mitigation actions required for the site are addressed in the *Addendum Mitigation and Monitoring Program for Trimble Road Widening and Wooster Avenue Bridge Replacement Project to be Constructed at the Story Road Mitigation Site* (Harris Design, April 10, 2003).

1.2 SUMMARY OF PROJECT PERMITS AND REQUIREMENTS

1.2.1 California Department of Fish and Game (CDFG) Agreement – RS-2000-0082 and RS-2001-085

The riparian habitats within the Trimble Road and Wooster Avenue project areas are under the jurisdiction of the California Department of Fish and Game (CDFG) under 1601 of the California Fish and Game Code.

The Trimble Road and Wooster Avenue bridge projects resulted in the removal of riparian woodland and in-stream wetlands. To mitigate these impacts, the Story Road Mitigation Site provides for the revegetation of 0.65 acre of riparian woodland and 0.36 of seasonal wetlands, consistent with Streambed Alteration Agreement R3-2000-0082 (Trimble Road) and R3-2001-0850 (Wooster Avenue).

These riparian and wetland mitigation areas must be established and meet performance criteria by the end of Year 5. Yearly monitoring reports (to Year 5) are required to be submitted to CDFG by March 31 following each monitoring year, beginning in March 2005 and extending through 2009.

1.2.3 U.S. Army Corps of Engineers (ACOE) - NWP No. 26414S and NWP No. 24927S

The creek environs within the Trimble Road and Wooster Avenue bridge project areas are under the jurisdiction of the ACOE under Section 404 of the Clean Water Act. The roadway projects resulted in the placement of fill within Waters of the U.S., including wetlands. To mitigate these direct impacts pursuant to the ACOE's Nationwide Permit requirements, mitigation for impacts to ACOE-jurisdictional wetlands was required. To mitigate these impacts, the Story Road Mitigation Site provides for the establishment of 0.36 acre of seasonal wetlands, consistent with NWP No. 24927S (Trimble Road) and NWP No. 26414S (Wooster Avenue).

The mitigation must be established and meet performance criteria by the end of Year 5. Yearly monitoring reports (to Year 5) are required to be submitted to ACOE by March 31 following each monitoring year, beginning in 2005 and extending through 2009.

1.2.4 Regional Water Quality Control Board Water Quality (RWQCB) Certification – No. 2188.07

The creek environs within the Trimble Road and Wooster Avenue bridge project areas are under the jurisdiction of the RWQCB under Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act. The roadway projects resulted in the placement of fill within Waters of the State. To mitigate these impacts and in compliance with the RWQCB's requirements, the project includes mitigation for impact to State waters through the creation of new wetlands at the Story Road Mitigation Site, consistent with waivers and consistency determinations for Site 02-43-C0282 (Trimble Road) and Site 02-43-C0382 (Wooster Avenue).

The mitigation must be established and meet performance criteria by the end of Year 10. Yearly monitoring reports (to Year 10) are required to be submitted to RWQCB by March 31 following Years 1-5, Year 7 and Year 10, beginning in 2004.

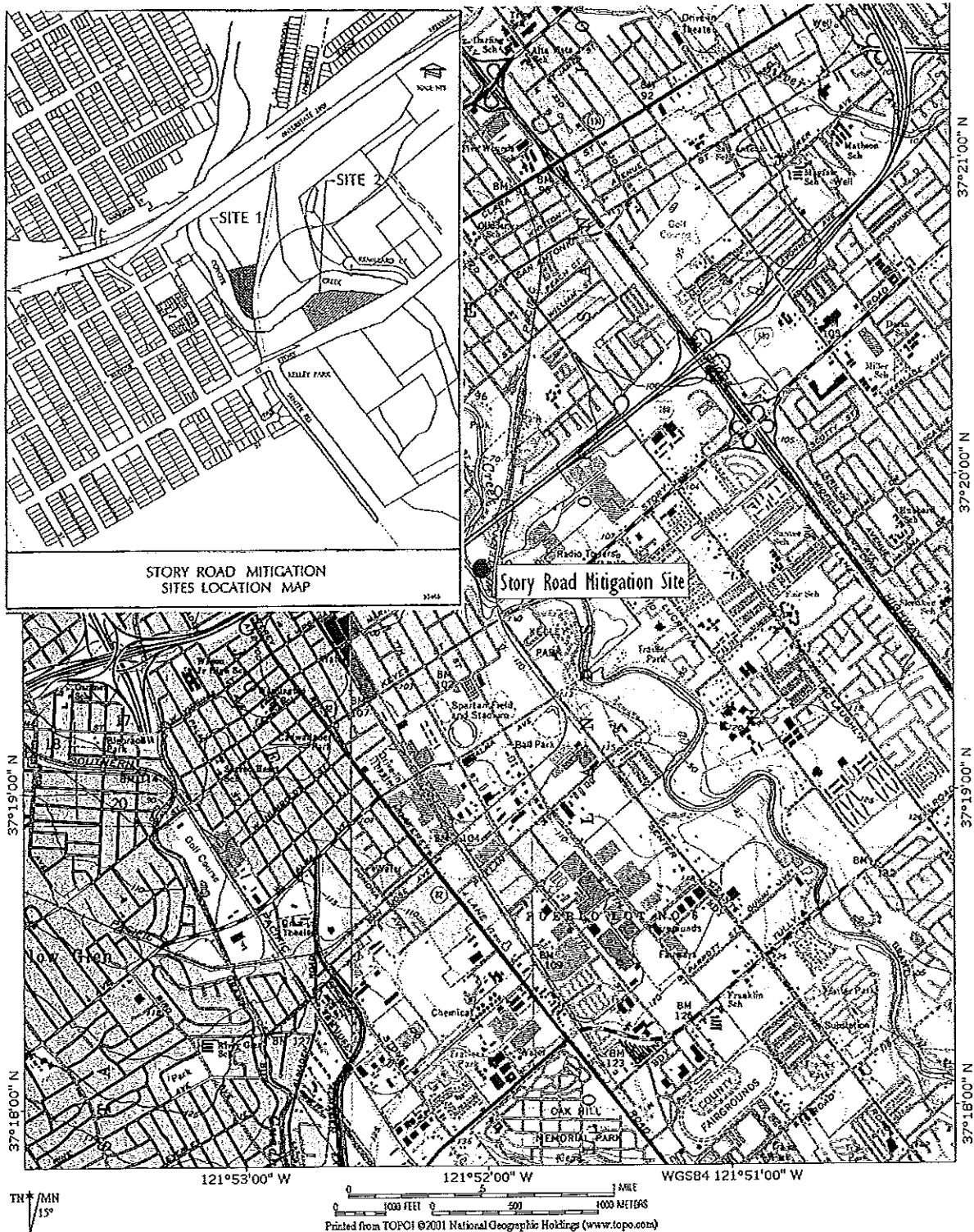
1.2.2 City of San Jose Planning Department - Environmental Review

The City of San Jose conducted environmental review of the two projects. The environmental documents identified mitigation measures for biological resources, and consistent with other regulatory agency permit requirements identified the Story Road Mitigation Site to provide for the revegetation of 0.65 acre of riparian woodland and 0.36 of seasonal wetlands.

The mitigation area must be established and meet performance criteria by the end of Years 1-5, 7 and 10. Yearly monitoring reports (to Year 10) are to be prepared by the City by March 31 of Years 1-5, Year 7, and Year 10.

1.3 SUMMARY OF ENVIRONMENTAL MAINTENANCE REQUIREMENTS

The mitigation requirements are derived from the City of San Jose' environmental documents and regulatory agencies permit conditions, the need to create a self-sustaining wetland and riparian mitigation area, and the need to maintain and manage the mitigation area within the projects 10-year reporting schedule. The mitigation requirements follow those outlined in the projects mitigation and monitoring plan (Harris Design, 2003) and further specified in agency permits and conditions.



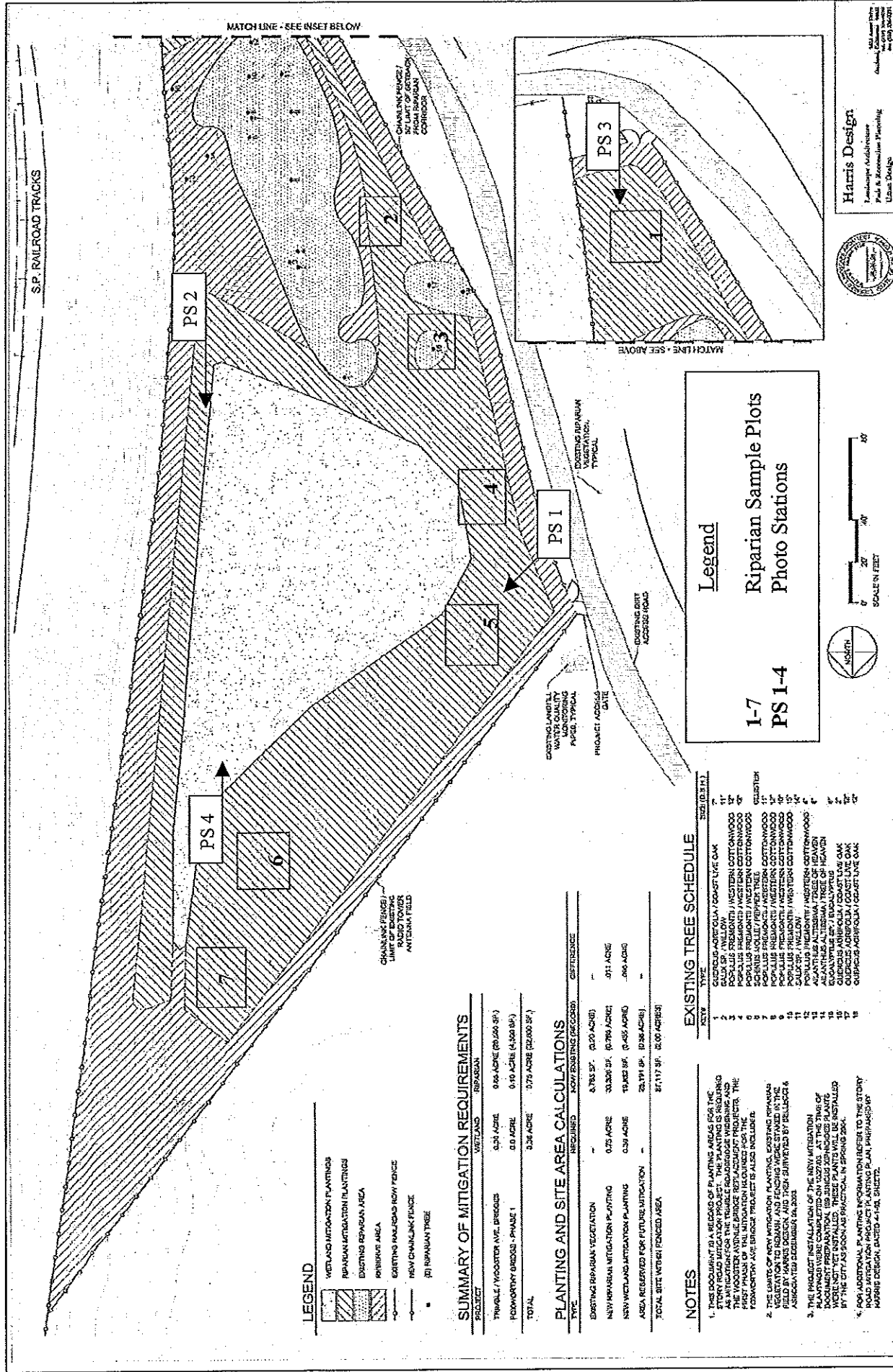
Base Map : USGS Topographic Map, San Jose East

Biotic Resources Group

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Story Road Mitigation Site No. 1
Environmental Mitigation Program
Year 5 (2008) Monitoring Report

Figure 1
12/08

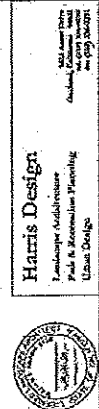


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Story Road Mitigation Site
Environmental Mitigation Program - Year 5 (2007) Monitoring Report

Figure 2
12/08



Implementation of the mitigation plan and subsequent maintenance and monitoring of the mitigation areas is designed to ensure project compliance with applicable permits and conditions of approval. This will be accomplished by implementing a 10-year maintenance and monitoring program, beginning in Year 1 (Year 2004), such that plant survival rates are maximized and desired habitat features are achieved. The mitigation area will also be maintained to ensure compliance with restricted uses. The 10-year establishment period will maximize the potential for long-term plant survival within the mitigation area. The maintenance and monitoring program also includes the implementation of remedial actions on a yearly basis if plantings or habitats fail to meet performance standards or are not proceeding in a manner that will lead to the project meeting its 10-year requirements. The success of the maintenance and monitoring program will be documented by implementing the 10-year monitoring program that documents the status of the mitigation area and reports the findings to the regulatory agencies on a yearly basis through Year 5, Year 7, and at Year 10.

1.4 SUMMARY OF REPORTING REQUIREMENTS

Under the requirements of the project's regulatory permits, the status of the mitigation area and its compliance with these permits/agreements must be reported in a yearly monitoring report. During Years 1-5, the yearly report is to be submitted to CDFG, ACOE, RWQCB and City of San Jose by March 31 following each year's monitoring. During Years 6-10, reports for Year 7 and Year 10 are to be submitted to RWQCB and City of San Jose Planning Department by March 31 following each year's monitoring.

Each year's annual monitoring report shall contain a brief description of the project, methods used to collect and analyze the data, results of the data analysis, conclusions regarding the present conditions of the site and remedial actions to be implemented.

1.5 SUMMARY OF REVEGETATION ACTIVITIES IMPLEMENTED

A landscape contractor under contract to the City planted the site in fall 2003. A total of 554 container stock riparian plants and 980 wetland plants were specified for installation, as listed on Table 1 (Harris Design, April 2003). All but 194 wetland plants were installed in fall/winter 2003 (Table 1). In addition, native wetland plant species were hydroseeded within the wetland basin, as listed in Table 1. Following plant installation, the contractors installed mulch around each planting. Below and aboveground browse protection cages were installed at all riparian plantings. Central Coast Wilds, a landscape contractor under contract to the Biotic Resources Group, installed the remaining 194 wetland plants within the wetland basin in early summer 2004. The site was monitored in Years 1 (2004), 2 (2005), 3 (2006), and 4 (2007) as reported in the yearly monitoring reports (Biotic Resources Group, February 2005, January 2006, December 2006, February 2008). Replacement plants were installed in January 2006 and November 2006.

The Biotic Resources Group, under contract to Central Coast Wilds, monitored the mitigation area from January 2008 to October 2008. The monitoring program consisted of several reconnaissance inspections and detailed monitoring sessions as per Year 5 protocols. The results of the Year 5 monitoring are presented in this report. The report also identifies whether the project has met the Year 5 performance standards identified for the project and recommends remedial actions to ensure the project meets the project's long-term habitat goals.

Table 1. Plant Installation within Project Area, Story Road Mitigation Site No. 1

Scientific Name	Common Name	Spacing (Feet)	Container Size	Number of Plants Specified for Installation	Number of Plants Installed in 2003/04
Riparian Planting Area					
<i>Acer negundo</i>	Box elder	14	Tree pot	36	36
<i>Aesculus californica</i>	California buckeye	14	Tree pot	18	18
<i>Baccharis pilularis</i>	Coyote brush	10	Dee pot	191	211
<i>Baccharis salicifolia</i>	Mule fat	10	Dee pot	192	195
<i>Quercus agrifolia</i>	Coast live oak	16	Tree pot	81	81
<i>Sambucus mexicana</i>	Blue elderberry	12	Dee pot	36	36
Total				554	577
Wetland Basin Planting Area					
<i>Eleocharis macrostachya</i>	Creeping spikerush	5	Tree band	490	490
<i>Juncus xiphioides</i>	Iris-leaved rush	5	Tree band	490	490
<i>Hordeum branchyantherum</i>	Meadow Barley	-	Seed	41 lbs.	41 lbs.

1.6 METHODOLOGY

The Story Road Mitigation Site was visited for reconnaissance inspections on January 15, April 16, June 11, September 1, 2, 3, and 12, 2008. Kathleen Lyons conducted these inspections. At the inspection sessions, general environmental features of the mitigation site (including plantings within the riparian planting area and wetland basin) were noted (i.e., surface erosion, human disturbances) as well as general plant species performance and area maintenance. Kathleen Lyons also conferred with Central Coast Wilds on the status of their maintenance activities at the site.

In September 2008, detailed monitoring sessions were conducted to document the plantings within the riparian planting area. At the monitoring sessions, permanent sampling plots that were established in Year 1 were re-sampled. Seven (7) sampling plots, each measuring 25 feet by 25 feet (totaling 625 square feet) were re-sampled. The location and orientation of each sample plot is depicted on Figure 2. Each planting within the plot was assessed for plant survival, height, health and vigor (i.e., presence of chlorosis, limb dieback, drought stress). The rating system used for plant health and vigor is listed on Table 2.

Table 2. Plant Health and Vigor Rating System, Story Road Mitigation Site

Code	Rating	Health Characteristics	Vigor Characteristics
4	Excellent	75-100% healthy foliage	Vigorous new growth observed throughout plant
3	Good	50-74% healthy foliage	Vigorous new growth observed only at terminal bud
2	Fair	25-49% healthy foliage	No new growth evident
1	Poor	0-24% healthy foliage	Stem dieback observed

The wetland environment of the basin was monitored in September with ten randomly placed 1-m² quadrats. At each quadrat plant species cover was documented.

The mitigation area was also evaluated as to site maintenance and other disturbances. Photographs documenting each the permanent sampling plots and the overall condition of the mitigation plantings were taken. Four photo stations were established. The location of photo stations is depicted on Figure 2.

1.7 MONITORING RESULTS

1.7.1 Reconnaissance Inspections

The reconnaissance inspections of the mitigation area documented the status of plant growth and maintenance activities, as well as the general progress of the revegetation efforts. Figure 3 depicts the condition of the northernmost riparian planting area in January 2004 soon after plant installation. Figure 4 shows this same area in September 2008 and the plant growth that has occurred over this five year period.



Figure 3. View of riparian planting area at northern edge of mitigation area, January 2004. (Photo station #1)



Figure 4. View of riparian planting area at northern edge of mitigation area, September 2008. (Photo station #1)

During Year 5 (2008), the mitigation plan requires competition from weeds and/or invasive, non-native plant species within the planting basins be minimized. The basins are required to be controlled for weeds during the growing season. In addition, weeds and/or invasive, non-native plant species within other portions of the mitigation area (i.e., areas outside of planting basins, yet within the overall mitigation area) are to be minimized to maximize plant survival and desired habitat features. The 2008 reconnaissance inspections documented adherence to these maintenance requirements. CCW weeded planting basins, removed browse cages, weed-whipped areas between the plantings, repaired of watering basins, and worked to control/remove invasive, non-native plant species. A patch of Bermuda grass (*Cynodon dactylon*) occurs in the western portion of the mitigation area. Bermuda grass is a perennial

grass, spreading by underground rhizomes, above ground stolons and by seed carried in by wind, mowers/weed-whippers, clothing and shoes. It is found in areas where the ground does not freeze. Bermuda grass has become a serious pest as it spreads around the mitigation plantings. CCW sprayed the Bermuda grass with herbicide (*Rodeo®*) in August and December 2008, yet additional treatments will be needed to eradicate this species from the mitigation site.

The reconnaissance inspections revealed that plant health and survival was very good to excellent, as evidenced by observations of the plantings and plant growth. Maintenance of the mitigation area and each individual planting basin was rated very good, as evidenced in most areas by a low amount of weed cover and maintenance of mulch around the tree plantings.

Natural recruitment of native plant species continued in 2008. As shown in Figure 5, individuals of Fremont cottonwood (*Populus fremontii*), have established around the perimeter of the wetland basin. Other naturally occurring native species are arroyo willow (*Salix lasiolepis*) and cattail (*Typha* sp.). In November and early December the above-ground irrigation lines and sprinkler heads were removed from the planting area and stockpiles for removal by City crews. The irrigation controllers will remain on site. The perimeter fence and gates will be retained until 2012 (or longer if so desired by the City).

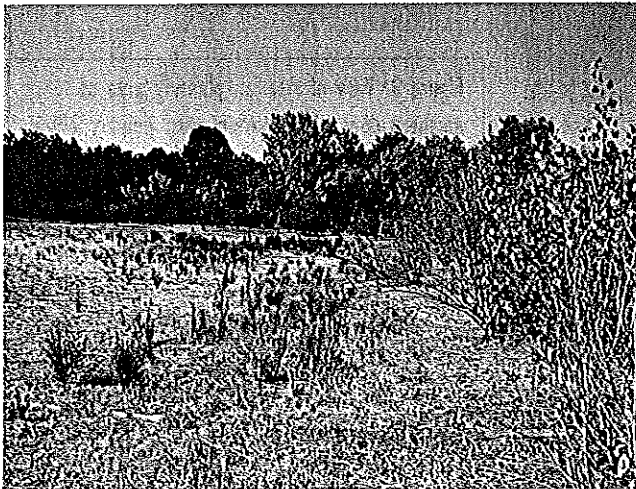


Figure 5. View of volunteer cottonwoods growing at the basin edge, September 2008.

1.7.2 Plant Survival Monitoring within Riparian Planting Area

Detailed monitoring of the riparian plantings was conducted in September 2008. The monitoring was conducted approximately 5 years after the original plantings were installed and approximately 2.5 years after replacement plantings. A summary of the monitoring results is presented in Table 3.

The monitoring documented plant survival of all installed trees. Within the seven sampling plots plant cover, plant survival, plant height and plant health/vigor was recorded. Weeds were minimal in the planting basins at all sites and the irrigation system, overall, was in proper condition. Within the sample plots, invasive, non-native plants were limited to patches of Bermuda grass (*Cynodon dactylon*). Natural recruitment of coast live oak (*Quercus agrifolia*), coyote brush (*Baccharis pilularis*) and willow (*Salix* sp.) was observed. Elsewhere in the mitigation area, other volunteer species include California walnut (*Juglans hindsii*), box elder (*Acer negundo*), and California poppy (*Eschscholzia californica*).

Table 3. Summary of Year 5 (2008) Plant Survival Data within Riparian Planting Area, Story Road Mitigation Site No. 1

Plant Species	Number of Plants Specified for Installation (Fall 2003)	Number of Plants Alive (9/08)	Percent Survival in Year 5 (9/08)	Percent Survival Required in Habitat Mitigation and Monitoring Plan	Number of Plants to Install to Meet 70% Survival Rate Per Species
TREES					
Box Elder	36 ¹	26	72%	70%	0
California buckeye	18	14	77%	70%	0
Coast live oak	81 ¹	61	75%	70%	0
Blue elderberry	36 ¹	25	70%	70%	0
TREE TOTAL	171	126	74%	-	
SHRUBS					
Coyote Brush	191	200+ ²	100%+	70%	0
Mule fat	192	192+ ²	100%+	70%	0
SHRUB TOTAL	383	392	100%	-	

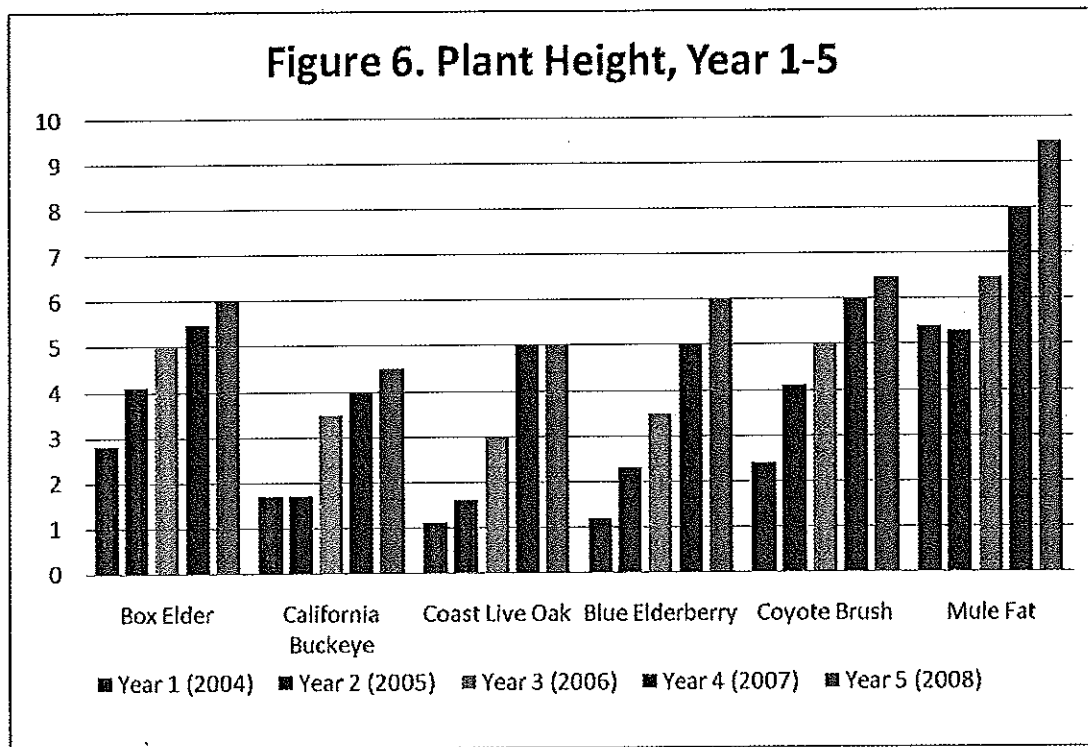
¹ Replacement plantings were installed in November 2006, 49 trees were installed to allow for some mortality in Year 4. The replacement plants included six box elders, six buckeyes, 12 coast live oaks, and 25 blue elderberries.

² - Estimated number of plants based on density and lack of dead individuals

During the 2008 monitoring session, the tree plantings yielded a 74% survival rate; shrub survival was over 100% (Table 3). All tree species meet the required 70% survival rate. The monitoring documented that most plants exhibited good to very good health and vigor (Table 4). The blue elderberry plantings were rated as good due to drought stresses and stem dieback. Of the trees, box elder and blue elderberry were the tallest, averaging 6 feet. California buckeye averaged 4.5 feet tall. The coast live oaks averaged 5 feet. For the shrubs, mule fat averaged 9.5 feet tall. Coyote brush averaged 6.5 feet tall. Figure 6 displays the trends in plant heights between Years 1 and 5.

Table 4. Riparian Planting Area, Year 5 (2008) Plant Data, Story Road Mitigation Site No. 1

Plant Species	Number of Plants Specified for Installation (Fall 2003)	Number of Plants Alive (9/08)	Percent Survival (9/08)	Average Height (Feet) (r= range)	Average Vigor	Average Health
TREES						
Box Elder	36	26	72%	6.0 (r=4.5-8.0)	3.8	3.7
California Buckeye	18	14	77%	4.5 (r=1.0-5.5)	3.7	3.7
Coast Live Oak	81	61	75%	5.0 (r=2.5-8.0)	4.0	4.0
Blue Elderberry	36	25	70%	6.0 (r=3.0-8.5)	3.0	3.0
Trees Total	171	126	74%	-	-	-
SHRUBS						
Coyote Brush	191	200+	100%	6.5 (r=5.0-9.0)	4.0	4.0
Mule Fat	192	192+	100%	9.5 (r=8.0-11.0)	3.8	4.0
Shrub Total	383	440	100%	-	-	-



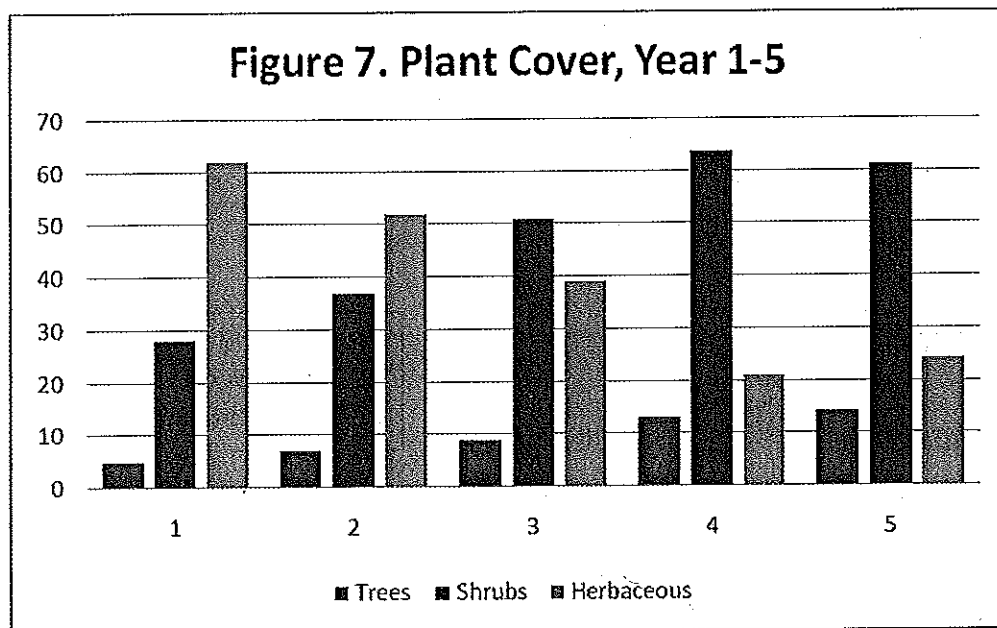
1.7.3 Permanent Sample Plot Monitoring within Riparian Planting Area

As per the mitigation and monitoring plan, the progress of the riparian planting area must be documented through permanent plots. The plan specifies a minimum of seven plots be established. In September 2004, the sample plots were established; these were re-sampled in September 2008. At each sample plot, data was collected on plant survival, plant cover (percent cover), tree height, site maintenance, plant health and vigor and natural recruitment of native and non-native woody species. Figure 7 displays the changes in plant cover between Years 1 and 5. Photographs were taken from the southwest corner of each sampling plot; these photos are be used to compare future plant growth within the plots and the planting area. Figures 8-14 depict the sample plots, with a comparison with 2004 (Year 1) and 2008 (Year 5) conditions.

Within the riparian planting area, herbaceous plant cover averaged 24.3, a decrease from 39% in Year 4 (Table 5). Shrub and tree cover averaged 61.4 and 14.3%, respectively (an increase from 51% [shrub] and 9% [tree], in 2007). These data are indicative of developing woodland. Over the last 5 years herbaceous cover has been consistently decreasing as the shrubs and trees grow. Two plots supported invasive, non-native plant species (Bermuda grass) and natural recruitment was observed in four plots (willow, coast live oak, and coyote brush).

Table 5. Sample Plot Data on Plant Cover from Riparian Planting Area Areas, Year 5 (2008)

Plot Number	Percent Relative Cover (%)				
	Herbaceous	Shrub	Tree	Natural Recruitment	Invasive Plant Species
1	35%	60%	5%	Coast live oak, coyote brush	-
2	30%	60%	10%	-	Bermuda grass
3	10%	40%	50%	Coast live oak	-
4	10%	80%	10%	Coyote brush	Bermuda grass
5	45%	50%	5%	-	-
6	20%	70%	10%	-	-
7	20%	70%	10%	-	-
Average	24%	61%	14%		



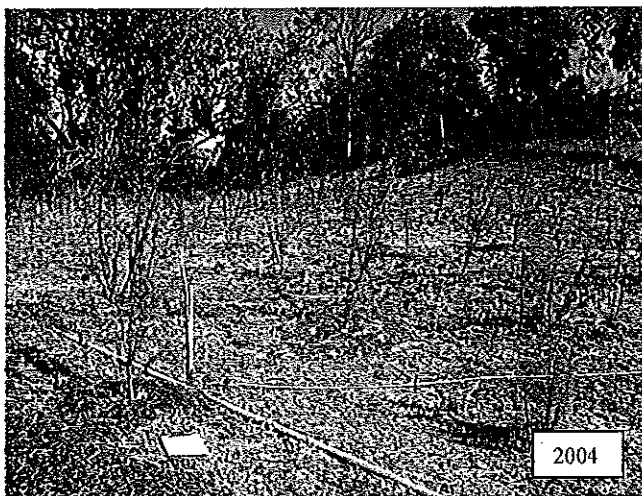


Figure 8. View of Sample Plot 1, September 2004. Sample plot contains 13 plants (all alive). Herbaceous cover is 80%; shrub cover is 20% and tree cover is 0%.



Figure 8B. View of Sample Plot 1, September 2008. Herbaceous cover is 35%; shrub cover is 60% and tree cover is 5%.



Figure 9A. View of Sample Plot 2, September 2004. Sample plot contains 10 plantings (all alive). Herbaceous cover is 65%; shrub cover is 25% and tree cover is 10%.



Figure 9B. View of Sample Plot 2, September 2008. Herbaceous cover is 30%; shrub cover is 60% and tree cover is 10%.

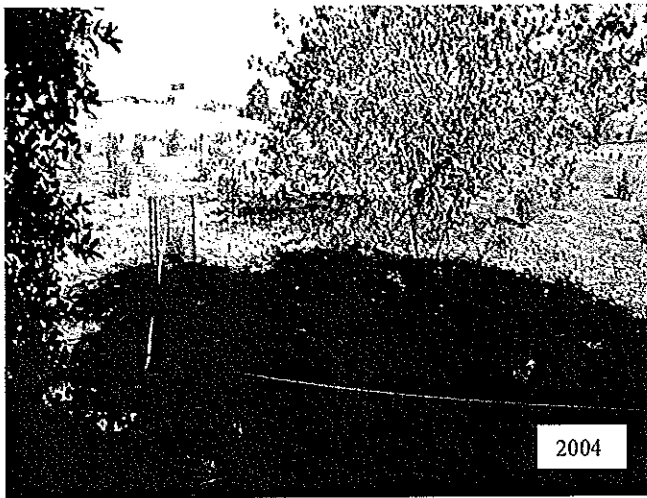


Figure 10A. View of Sample Plot 3, September 2004. Sample plot contains 7 plantings (6 alive, 1 dead). Herbaceous cover is 55%; shrub cover is 20% and tree cover is 25% (from pre-project trees).



Figure 10B. View of Sample Plot 3, September 2008. Herbaceous cover is 10%; shrub cover is 40% and tree cover is 50%.



Figure 11A. View of Sample Plot 4, September 2004. Sample plot contains 13 plantings (11 alive, 1 dead). Herbaceous cover is 54%; shrub cover is 25% and tree cover is 1%.



Figure 11B. View of Sample Plot 4, September 2008. Herbaceous cover is 10%; shrub cover is 80% and tree cover is 10%.

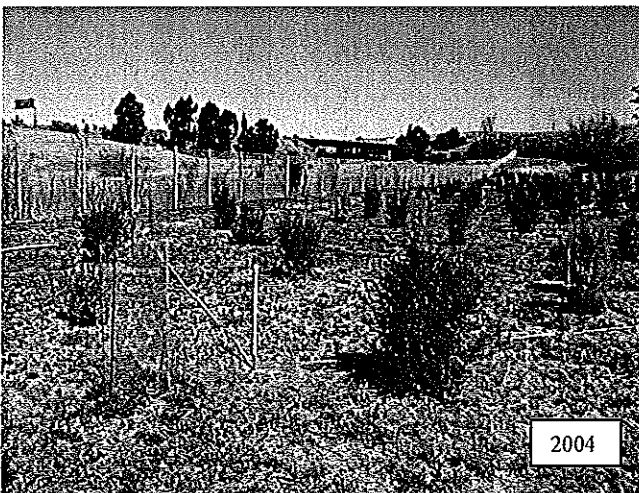


Figure 12A. View of Sample Plot 5, September 2004. Sample plot contains 11 plantings (10 alive, 1 dead). Herbaceous cover is 65%; shrub cover is 30% and tree cover is 2%.



Figure 12B. View of Sample Plot 5, September 2008. Herbaceous cover is 45%; shrub cover is 50% and tree cover is 5%.



Figure 13A. View of Sample Plot 6, September 2004. Sample plot contains 10 plantings (all alive). Herbaceous cover is 65%; shrub cover is 30%, tree cover is 0% and bare ground is 5%.



Figure 13B. View of Sample Plot 6, September 2008. Herbaceous cover is 20%; shrub cover is 70%, tree cover is 10%.

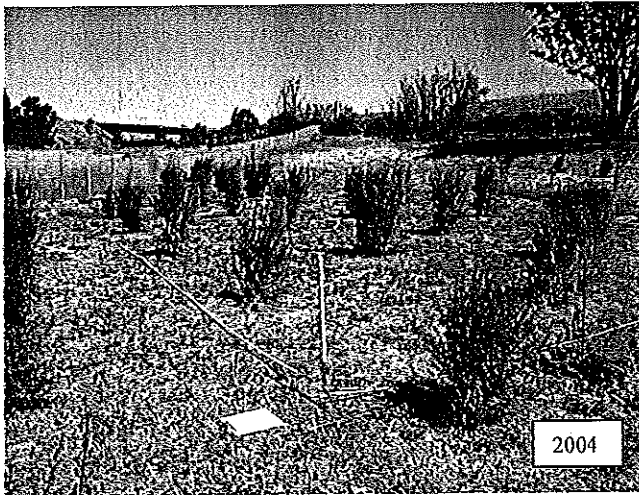


Figure 14A. View of Sample Plot 7, September 2004. Sample plot contains 9 plantings (all alive). Herbaceous cover is 50%; shrub cover is 45%, tree cover is 0% and bare ground is 5%.

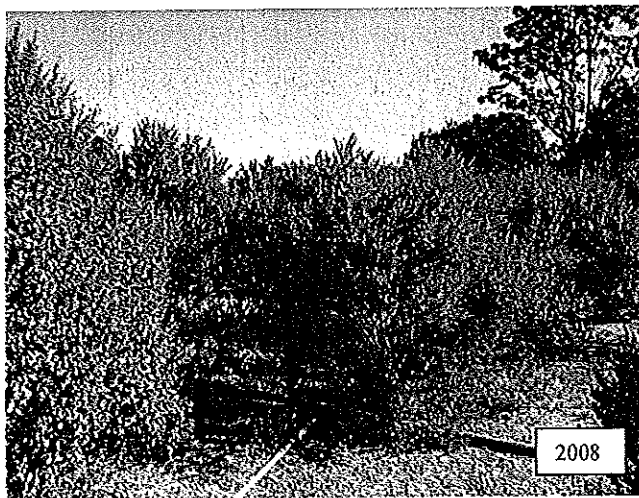


Figure 14B. View of Sample Plot 7, September 2008. Herbaceous cover is 20%; shrub cover is 70%, tree cover is 10%.

1.7.3 Sampling of Wetlands within Wetland Basin

As per the mitigation plan, the seasonal wetlands habitat within the basin is documented through a series of randomly placed 1-m² quadrats. Ten quadrats were sampled in September 2008 wherein plant cover was sampled. At each quadrat, data was collected on plant cover (percent cover) (by species) and bare, unvegetated ground. A summary of the wetland data is presented in Table 6. Figure 15 displays the wetland basin in January 2008. Due to below normal rainfall in February, March and April 2008 the basin has no surface water past March 31. In a normal water year surface water would be present to June or July. Wetland vegetation has continued to persist in the basin despite the 2-year drought conditions; however young coyote brush shrubs have colonized the edge of the basin (see Figure 16). These shrubs are expected to be drowned out with one or more consecutive normal to above normal rainfall years.

From the quadrat data, plant cover consisted primarily of herbaceous species, although coyote brush was noted in some quadrats (Table 6). Of the wetland plant species that were planted (meadow barley, spikerush and iris-leaved rush), the meadow barley displayed the highest cover. Spikerush had a patchy distribution, but was dense where it occurred in the northeast and southeast corners of the basin. All of the other plant species naturally recruited into the wetland basin from the wetland soil seed bank, seed from nearby habitats, and/or animal deposition. Wetland plant species dominant in the basin include rabbits

foot grass (*Polypogon monspeliensis*), red sprangletop (*Leptochloa filiformis*), barnyard grass (*Echinochloa crus-galli*), meadow barley (*Hordeum branchyantherum*), water plantain (*Alisma plantago-aquatica*), and willow herb (*Epilobium ciliatum*). Other species include bristly ox-tongue (*Picris echioides*), bog rush (*Juncus effusus*), and spreading rush (*Juncus patens*). The basin also supported patches of cattail (*Typha sp.*); however, these patches were smaller than in previous years. This may be due to the 2nd year drought conditions.

Plant cover averages 88%; approximately 12% of the wetland area sampled was bare (Table 6). Cover by wetland plant species is 85.4%.



Figure 15. View of wetland basin, which was dry in early January. Rainfall filled basin later in winter season, but the basin went dry earlier than normal due to drought conditions.

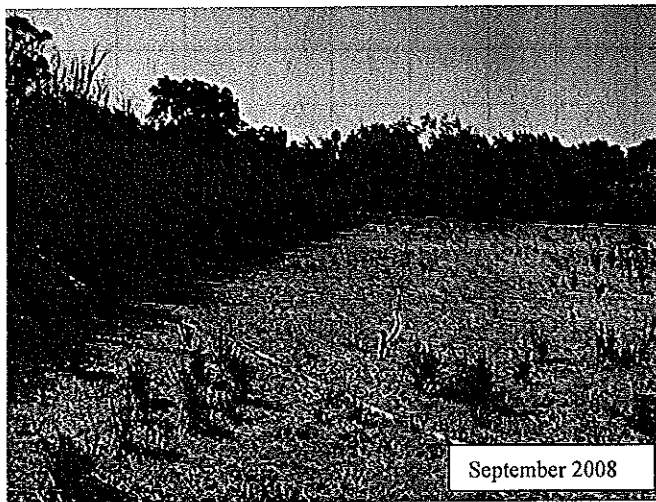


Figure 16. View of wetland basin in September 2008. Note young coyote brush plants establishing in the basin, likely due to 2nd consecutive year of drought conditions.

Table 6. Summary of Quadrat Data from Wetland Basin, Year 5 (2008), Story Road Mitigation Site No. 1

Plant Species	Wetland Status	Absolute Percent Cover (%)										Total Cover	Relative Cover
		1	2	3	4	5	6	7	8	9	10		
Water plantain (<i>Alisma plantago-aquatica</i>)	OBL (native)	5	0	0	0	0	15	20	0	0	20	60	6.5%
Red sprangletop (<i>Leptochloa filiformis</i>)	OBL (native)	10	5	0	0	0	5	0	0	0	0	20	2.2%
Barnyard grass (<i>Echinochloa crus-galli</i>)	FACW (non-native)	5	0	2	2	0	5	0	0	2	0	16	1.7%
Water smartweed (<i>Polygonum amphibium</i>)	OBL (native)	2	0	0	5	0	20	10	0	5	2	44	4.7%
Meadow barley (<i>Hordeum branchyantherum</i>)	FACW (native)	2	2	0	0	2	2	0	0	0	2	10	1.1%
Spikerush (<i>Eleocharis macrostachya</i>)	OBL (native)	1	0	0	0	0	0	0	0	0	0	1	0.1%
Witch grass (<i>Panicum capillare</i>)	FACW (non-native)	1	0	1	0	5	5	0	0	0	5	17	1.8%
Italian ryegrass (<i>Lolium multiflorum</i>)	FAC (non-native)	5	15	20	10	10	20	10	10	30	20	150	16.3%
Coyote brush (<i>Baccharis pilularis</i>)	UPL (native)	0	5	0	1	5	1	10	5	0	0	27	2.9%
Spreading rush (<i>Juncus patens</i>)	FAC (native)	0	2	0	2	5	0	2	0	0	0	11	1.2%
Rabbitsfoot grass (<i>Polypogon monspeliensis</i>)	FACW (non-native)	40	40	30	25	25	45	40	60	20	60	385	41.9%
Willow (<i>Salix sp.</i>)	FACW (native)	0	0	0	15	0	0	10	0	2	0	27	2.9%
Mule fat (<i>Baccharis salicifolia</i>)	FACW (native)	1	0	10	0	0	0	0	0	35	0	46	5.0%
Total Plant Cover		73	71	66	64	57	124	109	83	103	119	814	88.3%
Bare/Open Water		10	10	5	20	30	5	5	10	5	5	105	11.7%
Total												919	100%

1.8 CONCLUSIONS AND RECOMMENDATIONS

According to the mitigation and monitoring plan, the City is responsible for 70% survival for the planted trees and shrubs at the end of Year 5 (2008). The performance standards for the mitigation area are depicted in Table 7.

As per the data collected during the 2008 monitoring, the Story Road Mitigation Site No.1 has met the required plant survival rate for each species. The project currently has a tree survival rate of 74%; the

shrub survival rate is over 100%. The container stock trees and shrubs were in good to very good condition.

Table 7. Performance Standards for Years 1-5, Year 7 and Final Success Criteria for Year 10

RIPARIAN WOODLAND							
	Yr1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 7	Yr 10
Plant Cover (%) (Trees)	-	3	5	10	12	24	35
Plant Cover (%) (Shrubs)	-	3	5	6	8	14	20
Plant Survival	80-	80	80	70	70	-	-
Tree Height (feet)							
Blue Elderberry	-	2	3	4.5	6	7	9
Coast Live Oak	-	2	3	4.5	6	7	9
California Buckeye	-	2	3	4	5.5	7	8
Box Elder	-	2	3	4.5	6	7	9
WETLAND BASIN							
Plant Cover (%)	10	20	30	40	40	40	50
Cover by OBL, FACW and FAC Species	10	20	30	40	50	50	50

The installed trees have met the required height requirements. The Year 5 average heights for trees are: blue elderberry-6.0 feet; coast live oak- 6.0 feet; California buckeye- 4.5 feet; and box elder- 6 feet. The riparian mitigation area has achieved tree cover of 14% and shrub cover of 61%; these values exceed this Year 5 performance standard. This requirement was reached despite some substandard sized trees (box elder and California buckeye) due to localized soil conditions and replacement plantings. As new growth was documented on these species, no remedial actions are necessary at this time.

Wetland plant cover, including species considered OBL, FACW and FAC, was recorded at 85%; this value exceeds this performance standard.

Infestations of invasive, non-native plants were limited to patches of Bermuda grass and tree-of-heaven. Control of Bermuda grass was initiated in Year 5; however due to the invasive nature of the species additional control treatments will be necessary to eradicate the species from the site. The mitigation area abuts dense stands of tree-of-heaven, an invasive tree species. Control efforts have been implemented within the mitigation area in 2008; however, seeds from the nearby mature trees are expected to continue to colonize the mitigation area. The spread of these species may have long-term effects on the mitigation site.

1.8.1 Recommendations for Years 6 (2009) through 10 (2012)

The mitigation site is required to be maintained and monitored through Year 10 (2012). Specific monitoring sessions are required in Year 7 (2010) and Year 10 (2012).

Due to the success of the installed riparian trees and shrubs and the continuing development of herbaceous wetland plant species within the wetland basin no remedial planting is required.

The riparian mitigation area requires continued maintenance to ensure that site conditions remain conducive to the continued growth of installed plants and success criteria are reached in Years 7 and 10. Maintenance needs include the following actions:

1. **Control of Invasive Plant Species.** Continued removal/control occurrences of invasive non-native plant species that occur and/or invade the site (i.e., Bermuda grass and tree-of-heaven). Currently, infestations of non-native thistles (*Cirsium* and *Carduus*) have been removed from the site, but they may re-occur in the future. The site should be checked and weeds infestations treated a minimum of twice a year.

Bermuda Grass.

Within the mitigation area, herbicide application is the recommended treatment for Bermuda grass. According to the *UC IPM Pest Management Guidelines* Bermuda grass can be controlled with post emergent herbicides. Post emergent herbicides are applied to actively growing Bermuda grass foliage and stems during spring and summer. The best time to apply the herbicide depends on the type of herbicide and the situation where the weedy Bermuda grass is growing. There are two basic types of herbicides that can kill mature Bermuda grass, nonselective herbicides that kill most plant species and grass-selective herbicides that only kill plants in the grass family (Poaceae).

Grass-Selective Herbicides. These herbicides include the active ingredient sethoxydim (Grass Getter), fluazifop (Fusilade, Ornamec, and Grass-B-Gon), or clethodim (Envoy). Fusilade and Envoy are only available for sale to licensed pesticide applicators; the others are sold in most retail garden outlets. Early spring is the best time to apply a grass-selective herbicide. For best control with these herbicides, make the first application in spring when new Bermuda grass growth is less than 6 inches in length, then re-apply the herbicide before the regrowth reaches 6 inches again. Additional applications on regrowth may be needed through the spring and summer. It is important to be consistent with treating regrowth in order to eliminate the weed, but read the label of each product for information on the total amount that can be used per year per area. The best control is achieved when the Bermuda grass is growing vigorously, has lots of leaf surface and is not drought stressed, is not dusty, and has not been damaged by insects.

Nonselective Herbicides. Glyphosate (Rodeo) is a nonselective herbicide that kills plants by translocating down into the root system, in addition to killing top-growth. For glyphosate to be most effective it must be applied to Bermuda grass that is vigorously growing, not drought stressed, and has lots of leaf surface (do not mow the weed for 2 to 3 weeks before treating). The best time of the year to apply glyphosate is during late summer when the plant is storing food in the roots. Wait 7 days after applying to mow or cultivate the Bermuda grass. Cultivation will bring the underground parts of the plant (stolons and rhizomes) to the surface of the soil so they can dry. If left uncultivated, deeper rhizomes and roots may survive the first application and regrow.

Thistles

Typically, hoeing should occur prior to flowering, with the plant cut 2-4" below the ground surface. If flowers are on the plant, the cut/removed material should be bagged and removed from the site. If no flower heads have formed, the cut material can be left on site, with the possible exception of poison hemlock. Hoeing can be used at all times of the year, although plant removal before the flowering season (typically spring) is usually the most effective as a means of reducing weed seeds in the project area.

The general techniques for weed whipping thistles are similar. The idea is to whip the thistles when their root reserves are depleted to the maximum extent. This limits re-growth of individual

plants and reduces the number and size of repeat treatments required. The timing of the initial weed whipping is critical. However, local conditions require site inspections to determine the exact timing. The initial weed whipping should occur soon after the thistle has bolted (the main stem has risen from the basal leaf grouping) and during the period when the flower buds are forming, but have not yet opened. As bull thistles flower later in the season than Italian and slender thistle, the initial weed whipping for bull thistle may occur at a different time. However, it is likely that the initial bull thistle treatment will correspond with a secondary treatment for the Italian and slender thistle species. Additionally, for maximum effectiveness, as all thistles in an area do not bolt at the exact same time, several sessions over a period of a couple weeks may be required. If the timing is correct, only one or two re-treatments should be necessary. A periodic inspection of the thistle sites will be required to determine the number and timing of re-treatments. Any thistle flowers that have opened or about to open should be bagged and removed from the site

Tree-of-Heaven.

Young saplings of tree-of heaven should be cut flush with the ground and an application of herbicide applied to the cut stump. Cut material should be removed from the site. See Appendix A for the tree-of-heaven removal plan. This plan should be implemented before Year 10.

2. **Vandalism, Trash, and Homeless Encampments.** Periodic inspections to detect site vandalism and habitat disruption and degradation caused by transients and homeless encampments. As evidenced in 2008 the site is located adjacent to several large homeless encampments within/along the Coyote Creek corridor and a homeless encampment established within the mitigation area in 2008. Although the perimeter fence and gates will be retained until 2012 (or longer if so desired by the City), the site may be prone to the establishment of homeless encampments. If such encampments are found, the SJPD Metro Unit should conduct an enforcement sweep. Park maintenance crews should implements a creek clean-up for the area, as needed.
3. **Wildlife Movement.** Prior to Year 10 the City will cut 18"x18" openings at the bottom of the perimeter fence, 50 feet on-center, to allow small animal movement between the mitigation area and the creek. The perimeter fencing and gates can be retained until 2012 (or longer if so desired by the City).
4. **Habitat Monitoring.** Monitoring for Years 7 (2010) and Year 10 (2012) should follow the guidelines in the mitigation and monitoring plan. Monitoring shall document plant species, tree height and plant cover within the seven sample plots, document plant species and cover within the wetland basin and periodic reconnaissance inspections of the mitigation area. Year 7 and 10 reports are required to be submitted to the Regional Water Quality Control Board and the City of San Jose Planning Department.

Appendix A

Tree-of-Heaven Removal Plan



LEGEND

- Indicates a mature tree.



Shaded areas indicated
a group of saplings.

DEFINITIONS

Sapling:

A tree of less than 2 inches
in diameter.

Mature Tree:

A tree of greater than 2
inches in diameter.

NOTES

Mature trees are labeled
with a number. Height,
of trunks, and DBH for
mature trees can be found
on SHEET R4

Sapling groups are labeled with
a letter. The number of
Saplings in a group can be
found on SHEET R4



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Story Road Mitigation Site Tree of Heaven Removal Plan SITE #1

Designed: JTF	Project Number:
Drawn: AMH	Scale: As Shown
Checked: JTF	Drawing Number:
Reviewed: JTF	Sheet R1
Date: 2/2/06	